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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,599	12/29/2003	Jae-wan Kim	8021-173 (SS-19015-US)	1606

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EXAMINER	
NGUYEN, HAI L	

ART UNIT	PAPER NUMBER
2816	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/750,599	KIM, JAE-WAN	
	Examiner	Art Unit	
	Hai L. Nguyen	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-15 and 17-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-15 and 17-20* is/are rejected.

7)☒ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment received on 5/02/2005 has been reviewed and considered with the following results:

As to the objection to the drawings, Applicant's revision of the drawings has overcome the objection, as such; the objection has been withdrawn.

As to the objections to the specification, Applicant's amendments of the specification have overcome the objections, as such; the objections to the specification have been withdrawn.

As to the rejection to the claims, under 35 U.S.C. 112, 2nd paragraph, Applicant's amendments have overcome the rejections, as such; the rejections have been withdrawn.

As to the prior art rejections to the claims made in the previous Office Action mailed on 02/09/2005 are now withdrawn in view of Applicant's amendments. However, Applicant's amendments necessitate new grounds of rejection as set forth below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, 15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake (US Pat. 5,408,197) in view of Turnbull et al. (US Pat. 5,923,028), and further in view of Laletin (US Pat. 6,504,409).

With regard to claim 1, Miyake discloses in Fig. 9 a device for controlling a frequency response comprising a filter (27), wherein the filter comprising a first impedance component (variable resistor 28). Fig. 9 of Miyake shows a device meeting all of the claimed limitations of the claim except that the variable resistor does not have a structural limitation as recited in the claim. Turnbull et al. teaches in Fig. 1 a variable resistor comprising an impedance component (R1) and a switch (20) that is connected to the first impedance component, wherein the switch is switched on or off in response to a duty-controlled clock signal (V2); and an duty ratio controller. Therefore, it would have been obvious to one of ordinary skill in the art to replace the variable resistor of the prior art (28 in Fig. 9 of Miyake) with the variable resistor taught by Turnbull et al. in order to provide an optimum resistance value for adjusting the filter's range. Furthermore, the limitation "wherein the duty ratio controller receives a clock signal and a duty control signal for selectively adjusting the duty-controlled clock signal controls a duty ratio of a the clock signal, and generates a the duty-controlled clock signal." is also met. Since, any person skilled in the relevant art will recognize that the duty ratio controller can be produced in many ways including the claimed duty ratio controller, wherein the duty ratio controller receives a clock signal and a duty control signal for selectively adjusting the duty-controlled clock signal controls a duty ratio of a the clock signal, and generates a the duty-controlled clock signal (Fig. 1 of Laletin).

With regard to claim 3, the duty ratio controller (Fig. 1 of Laletin) further comprises a flip-flop (61), wherein the flip-flop receives a delayed signal (D) after obtaining the clock signal by a time delay.

Claim 15 is similarly rejected; note the above discussion with regard to claim 1.

With regard to claims 17-20, the references also meet the recited limitations in these claims.

4. Claims 1, 5, 6-9, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA), Fig. 2 in the present application, in view of Little, III et al. (US Pat. 4,494,551; previously cited) and further in view of Laletin (US Pat. 6,504,409).

With respect to claims 1 and 5, the APA in Fig. 2 shows a device for controlling a frequency response comprising a filter, wherein the filter comprising a first impedance component (C1/R1). Fig. 2 of APA shows a device meeting all of the claimed limitations of the claim except that the first impedance component does not have a structural limitation as recited in the claim. Little, III et al. teaches in Fig. 4 an adjustable impedance component comprising an impedance component (C1) and a switch (SW_H) that is connected to the first impedance component, wherein the switch is switched on or off in response to a duty-controlled clock signal (HIGH FREQ SW CONTROL); and an duty ratio controller. Therefore, it would have been obvious to one of ordinary skill in the art to replace the impedance component of the prior art (C1 of the APA) with the adjustable impedance component taught by Little, III et al. in order to provide an optimum impedance value for adjusting the filter's range. Furthermore, the limitation "wherein the duty ratio controller receives a clock signal and a duty control signal for selectively adjusting the duty-controlled clock signal controls a duty ratio of a the clock signal, and generates a the duty-controlled clock signal." is also met. Since, any person skilled in the relevant art will recognize that the duty ratio controller can be produced in many ways including the claimed duty ratio controller, wherein the duty ratio controller receives a clock signal and a duty control signal for selectively adjusting the duty-controlled clock signal controls a duty ratio

of a the clock signal, and generates a the duty-controlled clock signal (Fig. 1 of Laletin). Furthermore, the references also meet the recited limitations in claim 5.

With regard to claim 6, a second impedance component (R1 in instant Fig. 2 of the APA), that is connected to an input node and an output node of the filter.

With regard to claim 7, the filter further comprises an amplifier; a second impedance component (R1) that is connected to one terminal of the amplifier and an output node of the filter; and a third impedance component (R2) that is connected to the one terminal of the amplifier and an input node of the filter, wherein the first impedance component and the switch are serially connected between one terminal of the amplifier and the output node of the filter.

With regard to claim 8, the references also meet the recited limitations in the claim.

With regard to claim 9, the references also meet the recited limitations in the claim. Since, any person skilled in the relevant art will recognize that the resistor R1 of the APA can be implemented as an adjustable resistor by having a resistor connected in series with a switch, wherein the switch is switched on or off in response to a duty-controlled clock signal; for adjusting the filter's range. Note the above discussion with regard to claim 1.

With regard to claims 11-14, the references also meet the recited limitations in these claims. Since, any person skilled in the relevant art will recognize that a MOS transistor can be implemented as a switch, similar to the switch SW_H of the prior art.

Allowable Subject Matter

5. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to disclose or fairly suggest a duty ratio controller having specific structural limitations such as a delay component (120 in instant Fig. 11), wherein the delay component receives the clock signal (CLK), generates the delayed signal (DEL_CLK), and controls the time delay in response to a duty control signal (CS); and being configured in combination with the rest of the limitations of the base claims and any intervening claims.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai L. Nguyen whose telephone number is 571-272-1747 and Right Fax number is 571-273-1747. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The official fax phone number for the organization where this application or proceeding is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HLN
June 20, 2005

TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER
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